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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/982,061	10/17/2001	Eric M. Monroe	2207/12121	8329

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EXAMINER

SAXENA, AKASH

ART UNIT PAPER NUMBER

2128

DATE MAILED: 10/14/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/982,061

Applicant(s)

MONROE, ERIC M.

Examiner

Akash Saxena

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 04 August 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-22 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 04 August 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

1. Claims 1-22 have been presented for examination based on the amendment filed on 4th August 2005 for application 09/982,061.
2. Claim 1 has been amended to remedy the rejection under 35 USC § 101 and accordingly the rejection is withdrawn.
3. Objection to Drawing are withdrawn in the view of corrected drawing & supporting specification submitted to the office.

Response to Objection to Specification

4. Examiner agrees with the applicant that 37 CFR 1.77(b) states applicant "should" include "BRIEF SUMMARY OF INVENTION" and sees applicant hesitation in adding this section, as it might be taken as new subject matter added to the specification. Further MPEP 37 CFR 1.77(b) states: "If no text follows the section heading, the phrase "Not Applicable" should follow the section heading [...]". Examiner respectfully suggests adding this section with the contents of abstract copied into this section, which will make this section relevant and not add new subject matter. At present, the objection to the specification is maintained.

Response to applicant's arguments & amendment for

Claim Rejections - 35 USC § 103

5. Regarding Claim 1-5 and 16

Applicant argues that Mencinger does not teach or suggest **each of a plurality** of different types of temperature cycles fluctuations a package device is expected to undergo **over a product lifetime** as related to claim 1. Regarding claim 4, applicant argues that Mencinger does not teach **incorporating into accelerated life model quantified expected frequencies** and magnitudes of temperature fluctuations of a package chip device in each of plurality of temperature regime over product lifetime. Examiner respectfully disagrees with the applicant. Further, applicant acknowledges that examiner agrees that Mencinger does not teach above-mentioned limitations.

Applicant is considering Mencinger reference individually, where the rejection is made in combination with Doty. In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

Further, although Mencinger does not teach above limitations explicitly he is clearly aware of various temperature ranges and frequency of temperature cycle fluctuations a package is expected to undergo over a product lifetime. He gives at least 3 different scenarios besides the one disclosed in previous office action (Mencinger: Pg.5 Under Table 3 $\Delta T=150/400$ cycles, $\Delta T=175/300$ cycles; Fig.3:

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$\Delta T=40/1500$ cycles). Further, Mencinger provides Coffin-Manson model as accelerated life model (Mencinger: Table 2 & 3) incorporating the expected frequencies.

Applicant argues that Doty does not teach or suggest determining life test requirements that represent each of a plurality of different types cycle fluctuations a package/device is expected to undergo over a product lifetime, or incorporating into an accelerated life model quantified expected frequencies and magnitudes of temperature fluctuations of a package/chip device in each of a plurality of temperature regime over a product lifetime. Examiner respectfully disagrees, as Doty teaches plurality of different types cycle (Doty: Slide 3) over a product lifetime that can be used in the accelerated tests (Doty: Slide 3: Stress Durations – tests involving HTS, HTOL, P-T/C, I-T/C, THB & PC) and their associated magnitudes of temperature fluctuations (Doty: Slide 3 Stress conditions column – temperature ranges) and model quantified expected frequencies (Doty: Slide 3: Stress Durations – number of cycles).

Allegation that Doty determines tests/conditions by applying standard use environments across market segments but not across four application phases, is incorrect, as can be seen from slide 2-3. Slide 2 details operating condition section of the 4 phases disclosed in the slide 3. Further, examiner does not see any limitations to that effect in the claim language. Also office has considered the non-operational phases as disclosed above by Doty into product lifetime.

Further, applicant's argues that Doty does not teach 0-50 C degree temperature fluctuation occurring 10 times a day instead teaches operating range not detailing fluctuations and magnitudes of fluctuations in temperature. Examiner agrees with the applicant however the section pointed out are the operating conditions, which are modeled by the magnitude of temperature fluctuations (Doty Slide Col.2) and associated frequencies (Doty: Slide Col.3) that would model these actual operating conditions.

Applicant's arguments fail to comply with 37 CFR 1.111(b) because they amount to a general allegation that the claims define a patentable invention without specifically pointing out how the language of the claims patentably distinguishes them from the references.

Rational for combining Mencinger and Doty:

The examiner contends that the motivation to combine **Mencinger** and **Doty** is proper and in accordance with MPEP guidelines for the following reasons. MPEP 2143.01 Suggestion or Motivation To Modify the References first recites:

"There are three possible sources for a motivation to combine references: the nature of the problem to be solved, the teachings of the prior art, and the knowledge of persons of ordinary skill in the art." In re Rouffet, 149 F.3d 1350, 1357, 47 USPQ2d 1453, 1457-58 (Fed. Cir. 1998)

In this case the examiners rejection first addresses the nature of the problem to be solved, namely, modeling user environments and physical models that link environment to the accelerated life test for a processor package or a chip, relative to the teachings in the prior art. The examiner references the prior art (Mencinger), which discloses environment variables, stress tests (models) for various use

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conditions (for various markets: Pg.2 Methodology ¶12; Table 1) and suggests improvements by using models for these (by providing conservative predetermined model acceleration coefficient). Other prior art cited by the examiner such as Doty similarly discusses these model co-efficients and various stress tests models (Doty: Section 5 requirements) for plural use conditions and market application. Here, the examiner has established that both Doty and Mencinger are solving the same nature of the problem as would be easily recognized by a person skilled in the art.

Therefore, in suggesting a motivation to combine, the examiner specifically focused his motivation on the knowledge of persons of ordinary skill in the art & nature of problem to be solved. More specifically, that a skilled artisan would have made an effort to become aware of what capabilities had been developed in the market place, and hence would have knowingly modified Mencinger with the teachings of Doty.

(See: office action page 8 - motivation) MPEP 2144 Sources of Rationale

Supporting a Rejection Under 35 U.S.C. 103 recites:

"The rationale to modify or combine the prior art does not have to be expressly stated in the prior art; the rationale may be expressly or impliedly contained in the prior art or it may be reasoned from knowledge generally available to one of ordinary skill in the art, established scientific principles, or legal precedent established by prior case law. In re Fine, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988); In re Jones, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). See also In re Kotzab, 217 F.3d 1365, 1370, 55 USPQ2d 1313, 1317 (Fed. Cir. 2000) (setting forth test for implicit teachings); In re Eli Lilly & Co., 902 F.2d 943, 14 USPQ2d 1741 (Fed. Cir. 1990) (discussion of reliance on legal precedent); In re Nilssen, 851 F.2d 1401, 1403, 7 USPQ2d 1500, 1502 (Fed. Cir. 1988) (references do not have to explicitly suggest combining teachings)"

The examiner has simply asserted that a skilled artisan tasked with solving the problem of modeling plurality of use conditions relative to temperature fluctuations in various market segments (i.e. as taught by Mencinger), from various specific conditions (use in various specific market segments; Doty: Section 5.5) and phases

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(manufacturing, assembly, transport and use) (i.e. as taught by Doty), and further having access to the teachings of Mencinger and Doty, would have knowingly modified the teachings of Mencinger, with the teachings of Doty in order to gain the advantage of certifying the reliability of a processor package by using varied, conservative, comprehensive models for different environmental conditions (including various temperature fluctuation magnitude & frequencies). Specifically, a skilled artisan working in this obviously competitive environment would have made an effort to become aware of what capabilities had already been developed in the market place, and hence would have been aware of, and known to seek out the relative teachings of the problem to be solved.

Further, Mencinger implicitly recites the using Doty (Mencinger: reference [4], Pg .2 Lines 8-10) and provides a rationale to combine the two disclosed prior arts.

MPEP 2143.01 Suggestion or Motivation To Modify the References further recites the following supporting rational:

Obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either explicitly or implicitly in the references themselves or in the knowledge generally available to one of ordinary skill in the art. "The test for an implicit showing is what the combined teachings, knowledge of one of ordinary skill in the art, and the nature of the problem to be solved as a whole would have suggested to those of ordinary skill in the art." In re Kotzab, 217 F.3d 1365, 1370, 55 USPQ2d 1313, 1317 (Fed. Cir. 2000).

The examiner therefore appears to have established an implicit showing that in view of the combined teachings of the prior art, the relative knowledge of one skilled in the art, and in particular, the nature of the problem to be solved, there exists an obvious motivation to combine the references as noted above.

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In response to applicant's argument that the examiner's conclusion of obviousness is based upon improper hindsight reasoning, it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971). Examiner has previously established implicit showing that Mencinger and Doty are combinable.

6. Regarding Claims 2-3, 5

No arguments were presented for the above-mentioned claims except that they inherit from claims 1 & 4 respectively which are argued to be allowable. Applicant's arguments filed 4th August 2005 for claims 1 & 4 have been fully considered but they are not persuasive. Hence rejections for claims 2-3 & 5 are maintained.

7. Regarding Claim 16

Applicant's arguments filed 4th August 2005 for claim 4 have been fully considered but they are not persuasive and arguments for claim 16 is rejected for the same reasons, are maintained. Further, applicant argues that temperature fluctuations based on shipping route taken by the product is neither disclosed nor suggested in Mencinger and/or Doty. Examiner disagrees as Doty clearly teaches (Doty: Slide 2) & suggests variations based on daily temperature fluctuations based on seasons (Doty: Section 5.6.6 & 5.9.6– HTS Testing; Appendix A). It would be obvious to one

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skilled in the art at the time invention was made to model similar temperature relationships based on shipping routes (e.g. Shipping through Alaska – winter conditions; New Orleans - Rainy, humid, high-temperature conditions).

8. Regarding Claims 6-12, 14 and 17-22

No arguments were presented for the above-mentioned claims except that they inherit directly or indirectly from claims 1, 4 & 16. Arguments relating to claims 1, 4 & 16, addressed above, are found unpersuasive and rejection for claims 6-12, 14 and 17-22 is maintained.

9. Regarding Claims 13 & 15

No arguments were presented for the above-mentioned claims except that they inherit indirectly from claim 4. Arguments relating to claim 4, addressed above, are found unpersuasive and rejection for claims 13 & 15 is maintained.

Conclusion

10. Claims 1-22 are rejected for the same reasons as presented in previous office action mailed on 5th April 2005, incorporated herein by reference.

11. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

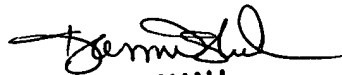
Communication

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Akash Saxena whose telephone number is (571) 272-8351. The examiner can normally be reached on 8:30 - 5:00 PM M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jean R. Homere can be reached on (571)272-3780. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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Wednesday, October 12, 2005


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